



Input-output gain of collective response in an uncoupled parallel array of saturating dynamical subsystems

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Auteur	Duan, Fabing [1], Chapeau-Blondeau, François [2], Abbott, Derek [3]
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Résumé en anglais	We explore the collective response of an uncoupled parallel array of saturating dynamical subsystems to a noisy periodic or random signal. Numerical simulation results show that a parallel array of nonlinear saturating subsystems can enhance the signal transmission via tuning the internal noise intensity and increasing the array size. The input-output gain larger than unity, described by the signal-to-noise ratio for a periodic signal or the correlation coefficient for a random signal, is observed in a form of array stochastic resonance. This stochastic resonance phenomenon can be useful for practical information-processing systems.
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- [2] <http://okina.univ-angers.fr/f.chapeau/publications>
- [3] [http://okina.univ-angers.fr/publications?f\[author\]=1973](http://okina.univ-angers.fr/publications?f[author]=1973)
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